APRIL 17, 1989
NARRATIVE FOR
CHARLES MIX COUNTY, SOUTH DAKOTA
OIL AND GAS DEVELOPMENT POTENTIAL MAP

INTRODUCTION:

Charles Mix County is located just east of the Missouri River in the southeastern part of the state. The topography is open grasslands with small rolling hills.

Regional geology shows the surface to have exposures of the Cretaceous Pierre Shale and Niobrara Formation, with isolated areas of recent and Pleistocene gravel (Darton, 1951). The Pre-Cambrian granite and Sioux Quartzite vary in structural elevation from 100 to 600 feet mean sea level. Regional dip of this basement rock is southwest (Steece, 1961). Houser (1987) has mapped a fault system along the Missouri River that strikes northwest. The upthrown side is to the northeast. It is this fault that is responsible for the lack of Paleozoic rocks in the northeast part of the county.

There have been only three wells ever drilled in this county for oil and gas, none in the past 15 years. Two of those wells were drilled in T. 95 N., R. 65 W. 6th Principal Meridian. These recorded questionable gas shows in the Pre- Cambrian rocks. Currently there is no established production in this county.

At one time two-thirds of the county was within the Yankton Indian Reservation. Presently, only a small portion of the extreme southeast corner of the county contains Indian lands. These lands were not classified.

OCCURRENCE POTENTIAL:

Most of Charles Mix County is classified as low occurrence potential. This is based on: 1.) a sedimentary package less than 2,000 feet thick as seen in water well and oil and gas drilling reports reviewed in this report. 2.) the lack of established production. There is no type log for this county.

DEVELOPMENT POTENTIAL:

All, but one township in Charles Mix County is classified as low development potential. This is based on the thin Cretaceous rocks that are present, and the lack of drilling data. The township that is of high development potential is based on the show of gas that was recorded in the Pre-Cambrian rocks.

It is expected that this area will experience a low level of surface disturbance from oil and gas activity in the next 15 years, except for a possible test near the reported show.

REFERENCES CITED

Darton, N. H., 1951, Geologic map of South Dakota: U. S. Geological Survey, scale 1:500,000

Houser, B. B., 1987, Southwestern bounding fault of the Sioux Quartzite, South Dakota: U. S. Geological Survey, Open File Report 87-626, 11p.

Steece, F. V., 1961, Pre-Cambrian surface of South Dakota: South Dakota Geological Survey, Mineral Resource Investigation Map, No. 2, scale: 1 inch = 30 miles.